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[54] GOLF PRACTICE APPARATUS

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[58] **Field of Search** 473/139, 140, 473/141, 143, 146, 147, 222, 225; 330/85

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[57] **ABSTRACT**

Golf practice apparatus utilizing a tethered golf ball wherein the kinetic energy is dissipated when the ball is struck. Initial velocity vectors in the x, y, and z coordinates are derived by time integrating the respective forces over the period of time during which the kinetic energy is dissipated. From these derived velocity vectors is computed what the trajectory of the golf ball would have been if it had been untethered. Alternatively, two of the initial velocity vectors may be derived as described above and the third obtained mathematically after first deriving total initial velocity. Golf ball spin about a vertical axis may be obtained for correction to the trajectory by means of a reflective strip on the ground facing surface of the golf club head and two or more sensors for detecting the reflections from opposite ends of the strip. A circuit for time integration of the force components includes a negative feedback integrator including a feedback circuit which is open during a time when force component signals are being received thereby effecting cancellation of effects of offsets inherent in strain gages and amplifiers.

15 Claims, 10 Drawing Sheets